What is claimed is:

1) An evanescent optical coupler comprising:

A) a pair of opposing and parallel carriers that define at least one pair of parallel and opposed first and second channels;

B) a mechanism for retaining said at least one pair of parallel and opposed first and second channels in facing relationship;

C) at least one first optical ribbon fiber having an exposed core located in the first of the parallel and opposed channels; and

D) at least one second optical ribbon fiber having an exposed core located in the second of the parallel and opposed channels;

wherein the at least one optical ribbon fiber core in the first of the parallel and opposed channels and the at least one optical ribbon fiber core in the second of the parallel and opposed channels are retained in abutting and facing evanescent optical contact and define at least one abutting pair of first and second optical ribbon fiber cores.

2) The evanescent optical coupler of claim 1 further including a mechanism for applying pressure to the pair of opposing and parallel carriers to assure intimate evanescent contact between the backplane waveguide ribbon fiber cores and the array waveguide evanescent coupler fiber cores.

3) The evanescent optical coupler of claim 2 wherein the mechanism for applying pressure to the pair of opposing and parallel carriers comprises a member

selected from the group consisting of: A) one or more locking screws mounted in a frame that serves as the retaining mechanism; and B) at least one calibrated spring inserted into a frame that serves as the retaining mechanism.

4) The evanescent optical coupler of claim 3 wherein said frame comprises an enclosed structure having a top a bottom and opposed sides connecting the top and the bottom, said parallel and opposing carriers are located in one corner of said enclosed structure against one of said walls and either said top or said bottom and said mechanism for applying pressure to the pair of opposing and parallel carriers comprises a pair of locking screws, one of which penetrates said top or said bottom and the other of said locking screws penetrates one of said walls thereby applying pressure to said opposing parallel carriers from two orthogonal directions.

5) The evanescent optical coupler of claim 3 further including a pressure distribution plate between the first opposing and parallel carrier and the mechanism for applying pressure to the pair of opposing and parallel carriers to provide even distribution of pressure to the pair of opposing and parallel carriers.

6) The evanescent optical coupler of claim 1 further including a layer of index matching fluid between the first at least one optical ribbon fiber having an exposed core and the second at least one optical ribbon fiber having an exposed core.

7) The evanescent optical coupler of claim 1 wherein said optical ribbon fibers comprise a member selected from the group consisting of: D-shaped optical ribbon fibers, polished ribbon fibers, organic and inorganic waveguide films and fiber pulling fabricated ribbon fibers.

8) An evanescent optical coupler comprising:

A) a pair of opposing and parallel carriers that define at least one pair of parallel and opposed first and second channels;

B) a mechanism for retaining said pair of parallel and opposed first and second channels in facing relationship;

C) at least one backplane waveguide ribbon fiber core located in the first of the parallel and opposed channels; and

D) at least one array waveguide evanescent ribbon fiber core located in the second of the parallel and opposed channels;

wherein the at least one backplane waveguide ribbon fiber core and the at least one array waveguide evanescent coupler fiber core are retained in abutting and facing evanescent optical contact and define at least one abutting pair of backplane waveguide ribbon fiber and array waveguide evanescent coupler fiber cores.

9) The evanescent optical coupler of claim 8 further including a mechanism for applying pressure to the pair of opposing and parallel carriers to assure intimate evanescent contact between the at least one backplane waveguide ribbon fiber core and the at least one array waveguide evanescent coupler fiber core.

10) The evanescent optical coupler of claim 9 wherein the mechanism for applying pressure to the pair of opposing and parallel carriers comprises a member selected from the group consisting of: A) one or more locking screws mounted in a frame that serves as the retaining mechanism; and B) at least one calibrated spring inserted into a frame that serves as the retaining mechanism.

11) The evanescent optical coupler of claim 10 wherein said frame comprises an enclosed structure having a top a bottom and opposed sides connecting the top and the bottom, said parallel and opposing carriers are located in one corner of said enclosed structure against one of said walls and either said top or said bottom and said mechanism for applying pressure to the pair of opposing and parallel carriers comprises a pair of locking screws, one of which penetrates said top or said bottom and the other of said locking screws penetrates one of said walls thereby applying pressure to said opposing parallel carriers from two orthogonal directions.

12) The evanescent optical coupler of claim 8 further including a pressure distribution plate between the first opposing and parallel carrier and the mechanism for applying pressure to the pair of opposing and parallel carriers to provide even distribution of pressure to the pair of opposing and parallel carriers.

13) The evanescent optical coupler of claim 8 further including a layer of index matching fluid between said at least one backplane waveguide ribbon fiber core and said at least one array waveguide evanescent ribbon fiber core.

14) The evanescent optical coupler of claim 8 wherein at least one backplane waveguide ribbon fiber core and said at least one array waveguide evanescent ribbon fiber core comprise a member selected from the group consisting of D-shaped optical ribbon fibers, polished ribbon fibers, organic and inorganic waveguide films and fiber pulling fabricated ribbon fibers.

15) An non-evanescent optical coupler comprising:

A) a pair of opposing and parallel carriers that define at least one pair of parallel and opposed first and second channels;

B) a mechanism for retaining said pair of parallel and opposed first and second channels in facing relationship;

C) at least one optical ribbon fiber or waveguide having an exposed core located in one of the first of the parallel and opposed channels; and

D) at least one second optical ribbon fiber or waveguide having an exposed core located in at least one of the second of the parallel and opposed channels;

wherein the at least one optical ribbon fiber core or waveguide in the first of the parallel and opposed channels and the at least one optical ribbon fiber core or waveguide in the second of the parallel and opposed channels are retained in abutting and facing optical contact and define at least one abutting pair of first and second optical ribbon fiber or waveguide cores.

16) The optical coupler of claim 15 further including a mechanism for applying pressure to the pair of opposing and parallel carriers to assure intimate evanescent contact between the first and second optical ribbon fiber or waveguide cores.

17) The non-evanescent optical coupler of claim 16 wherein the mechanism for applying pressure to the pair of opposing and parallel carriers comprises a member selected from the group consisting of: A) one or more locking screws mounted in a frame that serves as the retaining mechanism; and B) at least one calibrated spring inserted into a frame that serves as the retaining mechanism.

18) The optical coupler of claim 17 wherein said frame comprises an enclosed structure having a top a bottom and opposed sides connecting the top and the bottom, said parallel and opposing carriers are located in one corner of said enclosed structure against one of said walls and either said top or said bottom and said mechanism for applying pressure to the pair of opposing and parallel carriers comprises a pair of locking screws, one of which penetrates said top or said bottom and the other of said locking screws penetrates one of said walls thereby applying pressure to said opposing parallel carriers from two orthogonal directions.

19) The optical coupler of claim 18 further including a pressure distribution plate between the first opposing and parallel carrier and the mechanism for applying pressure to the pair of opposing and parallel carriers to provide even distribution of pressure to the pair of opposing and parallel carriers.

20) The optical coupler of claim 15 further including a layer of index matching fluid between a first at least one optical ribbon fiber or waveguide having an exposed core and the second at least one optical ribbon fiber or waveguide having an exposed core.

21) The evanescent optical coupler of claim 15 wherein said optical ribbon fibers or waveguides comprise a member selected from the group consisting

of: D-shaped optical ribbon fibers, polished ribbon fibers, organic and inorganic waveguide films and fiber pulling fabricated ribbon fibers.

22) The optical coupler of claims 1 and 8 and 15 including a frame that retains at least a single pair of optical fiber or waveguide cores in evanescent or optically coupled contact such that optical power can be transmitted from one core to another core in the contact region of the exposed cores. The frame inside and outside shapes can further be in any geometry such as square, rectangle, round, triangle, and even complicate polygon.

23) The frame of claim 22 further including a positioning structure to automatically align the said pair of first and second fiber ribbons or waveguides so that their corresponding channels can be in good alignment as required for the coupling.